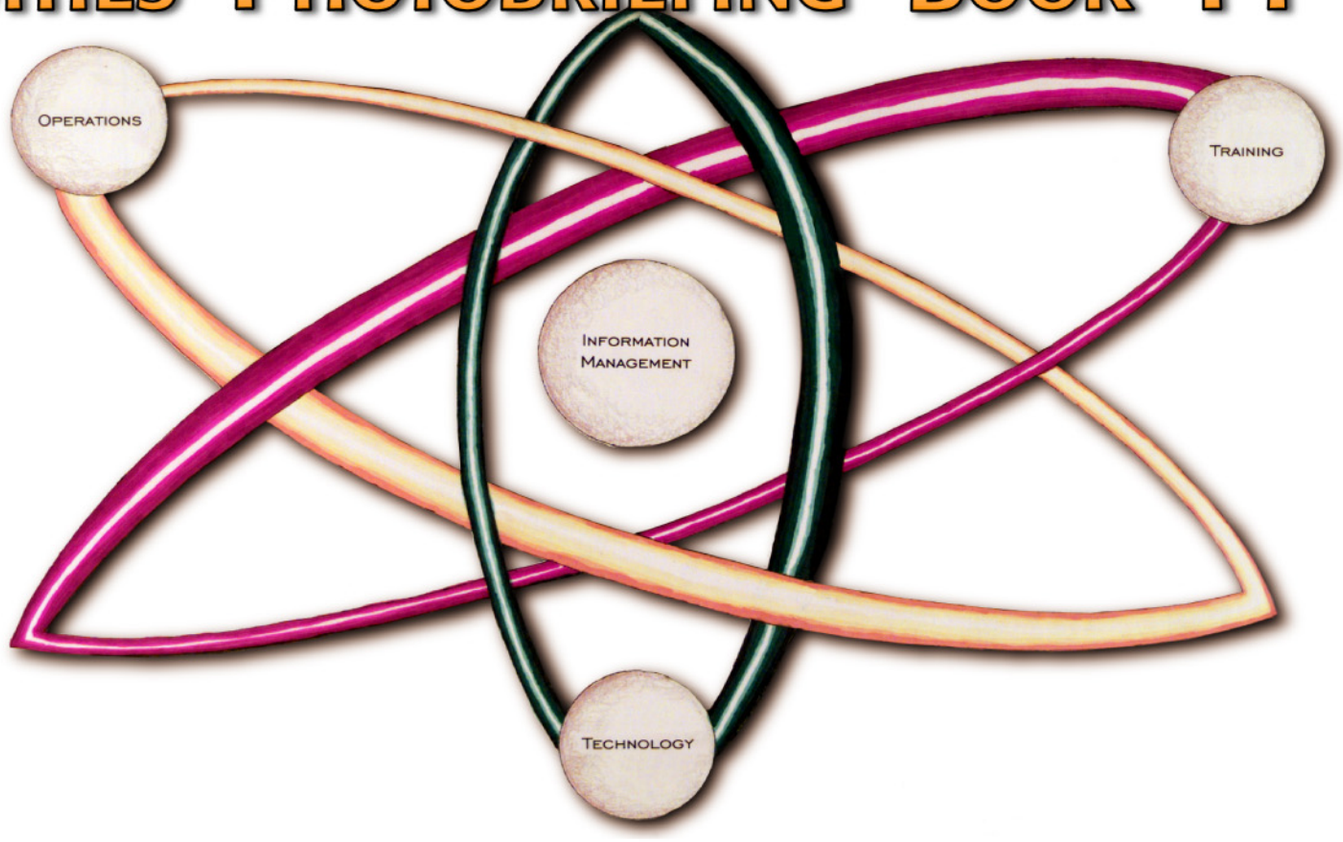
DECONTAMINATION & DECOMMISSIONING ACTIVITIES PHOTOBRIEFING BOOK FY 1997



ARGONNE NATIONAL LABORATORY - EAST
TECHNOLOGY DEVELOPMENT DIVISION
DECONTAMINATION & DECOMMISSIONING PROGRAM

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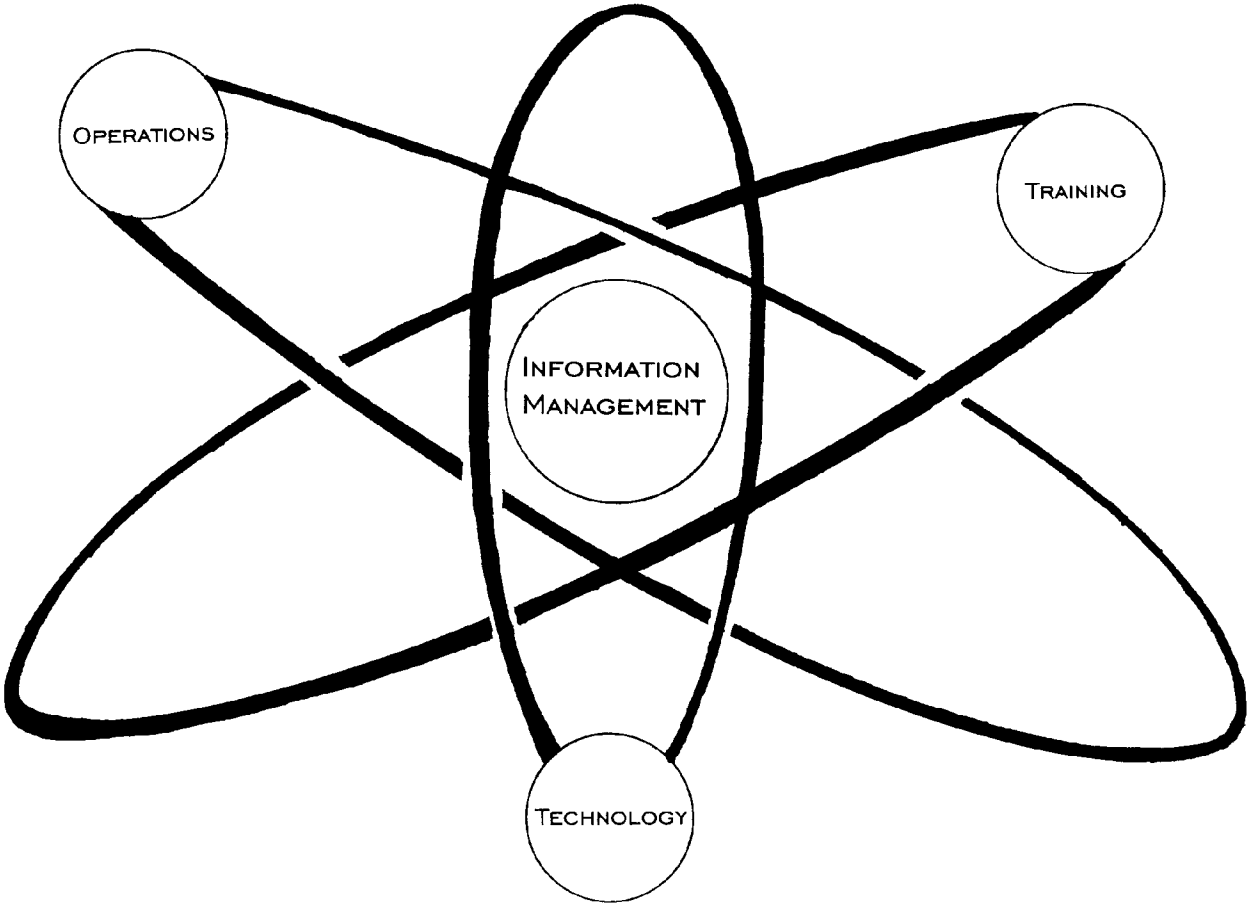

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FISCAL YEAR 1997
DECONTAMINATION AND DECOMMISSIONING
ACTIVITIES PHOTOBRIEFING BOOK

FOR THE

ARGONNE NATIONAL LABORATORY-EAST
TECHNOLOGY DEVELOPMENT DIVISION
DECONTAMINATION AND DECOMMISSIONING PROGRAM

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Argonne National Laboratory

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This photobriefing book is a product of Argonne's Technology Development Division, Decontamination and Decommissioning (D&D) Program. For further information on the activities of the D&D Program, contact:

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Disclaimer

Report Cover

The report cover was designed by Anja M. Wagner, D&D Program, Technology Development Division, Argonne National Laboratory. Information management is the nucleus of the ANL-E D&D Program, with each activity (Operations, Technology, and Education and Training) playing an integral role. Successful planning, execution and closeout of D&D projects produces lessons learned. Identification of D&D technology needs leads to innovative solutions through development, demonstration and deployment. Project experiences and technology recommendations are shared with the national and international D&D community through training courses and information exchanges. The ANL-E D&D Program is uniquely positioned to manage D&D information and to serve as a conduit through which this information can flow.

Report Availability

Available to DOE and DOE contractors from the Office of Scientific and Technical Information, P.O. Box 62, Oak Ridge TN 37831; prices available from (423) 576-8401. Available to the public from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield VA 22161.

FOREWORD

The Decontamination and Decommissioning (D&D) Program at Argonne National Laboratory-East (ANL-E) is dedicated to the safe and cost-effective D&D of surplus nuclear facilities. This mission includes all phases of D&D, from initial issue identification to conceptual design, detailed planning and budgeting, project execution, and project closeout and facility release. To complete the cycle, technological improvements and lessons learned are fed back to benefit future projects.

There is currently a backlog of more than 7000 contaminated U.S. Department of Energy facilities nationwide. Added to this are 110 licensed commercial nuclear power reactors operated by utilities learning to cope with deregulation and an aging infrastructure that supports the commercial nuclear power industry, as well as medical and other uses of radioactive materials. With this volume, it becomes easy to understand the importance of addressing, in a more integrated manner, the unique issues and objectives associated with the D&D of surplus nuclear facilities.

Argonne National Laboratory, a pioneer in the development of nuclear energy applications, is uniquely qualified to become a leader in charting the course for final disposition of the country's surplus nuclear facilities. By integrating the major aspects of the D&D problem into one seamless organization, the Laboratory is well positioned to provide the necessary leadership to a growing, and as yet relatively unfocused, D&D marketplace.

Robert W. Rose
Manager, D&D Operations and
Argonne Lead for the CP-5
Large Scale Demonstration Project

INTRODUCTION

INTRODUCTION

This photobriefing book summarizes the Decontamination and Decommissioning (D&D) projects and activities either completed or continuing at the Argonne National Laboratory-East (ANL-E) site during Fiscal Year (FY) 1997.

The ANL-E D&D Program

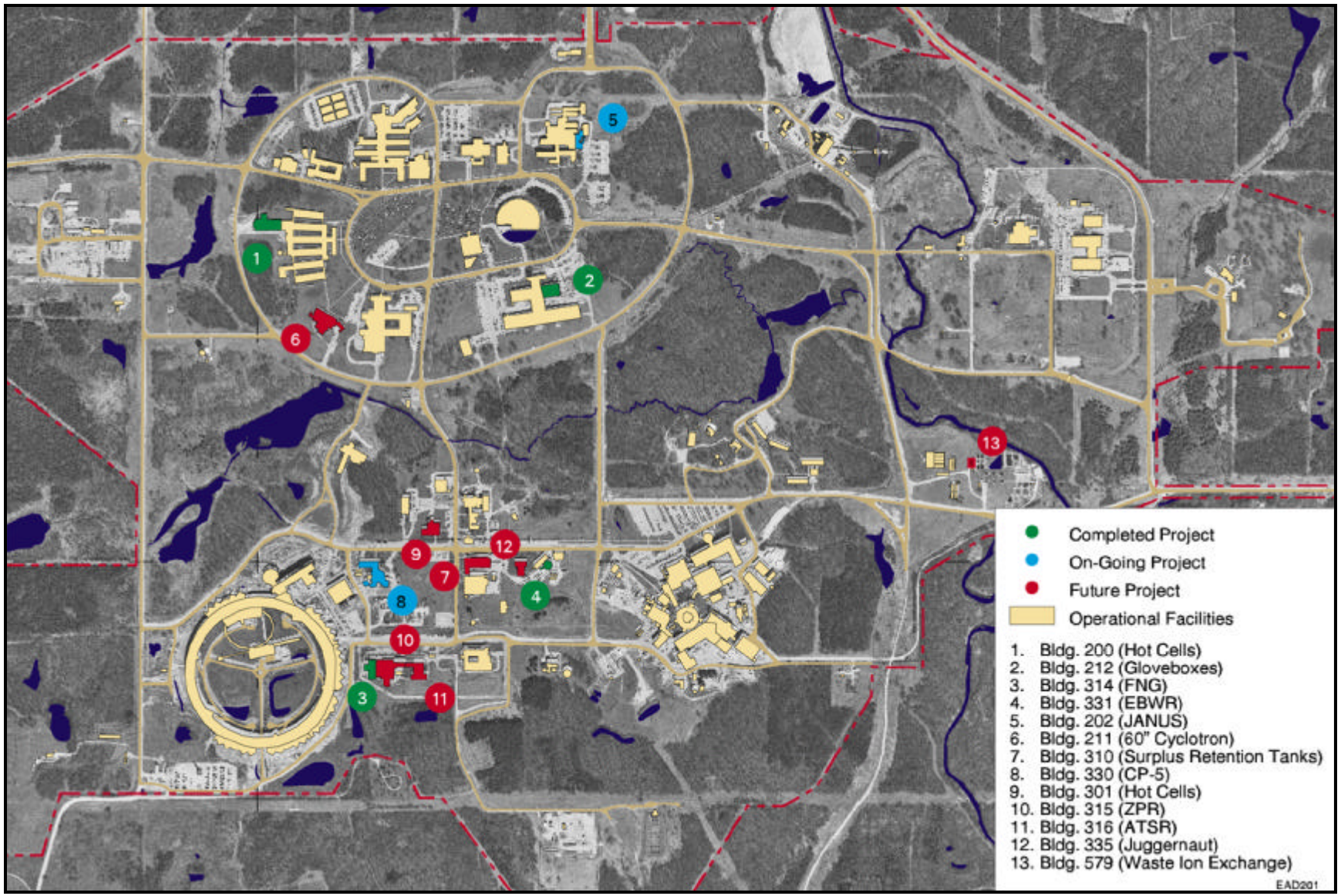
Three major components comprise the ANL-E D&D Program: operations, technology, and information exchanges. Funded by the U.S. Department of Energy (DOE) Off ice of Environmental Management (EM), the ANL-E D&D Program supports the missions of both DOE and ANL-E. As a highly visible component of the Technology Development Division, the ANL-E D&D Program shares in a rich history. Argonne National Laboratory has been associated with the development of every nuclear reactor type since the beginning of the nuclear age. Reactor D&D represents the final stage in reactor development and utilization.

The goals of the ANL-E D&D Program are to:

- conduct D&D operations safely, efficiently and economically, leading to a reuse of facilities where possible
- test and validate methods and technologies for the D&D of nuclear facilities
- incorporate lessons learned into D&D operations being conducted at the ANL-E site and within the DOE complex
- transfer knowledge gained on technologies and lessons learned to the commercial and international D&D communities
- provide technical expertise in national and international D&D activities through training and technical information exchanges

These goals are achieved through development of a broad knowledge base that contributes to the unique capabilities of the staff in the ANL-E D&D Program and through contacts and alliances with universities, integrating contractors, corporations, utilities, and international organizations.

D&D OPERATIONS



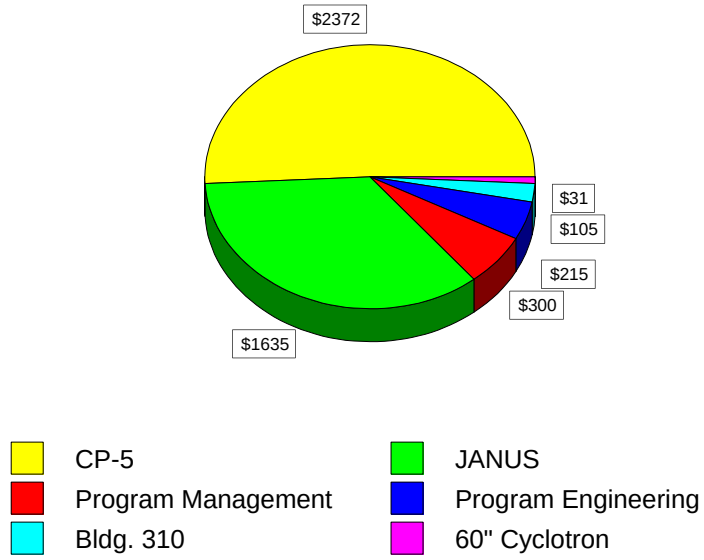
Status of D&D Projects at the Argonne National Laboratory-East Site (as of September 30, 1997)

FY 1997 Project Highlights

FY 1997 Project Status

- FY 1997 project funding totaled $4658K
- Physical D&D work at the JANUS Reactor facility was completed
- Physical D&D work at the CP-5 Research Reactor facility continued
- D&D planning and documentation for the Bldg. 310 Retention Tank D&D Project was completed
- Characterization Plan was prepared for the 60" Cyclotron facility
- Program Engineering/Oversight and Program Management activities were conducted

FY 1997 Project Funding (in $K)



FY 1993 - 1997 Project Status and Funding

D&D Projects Completed

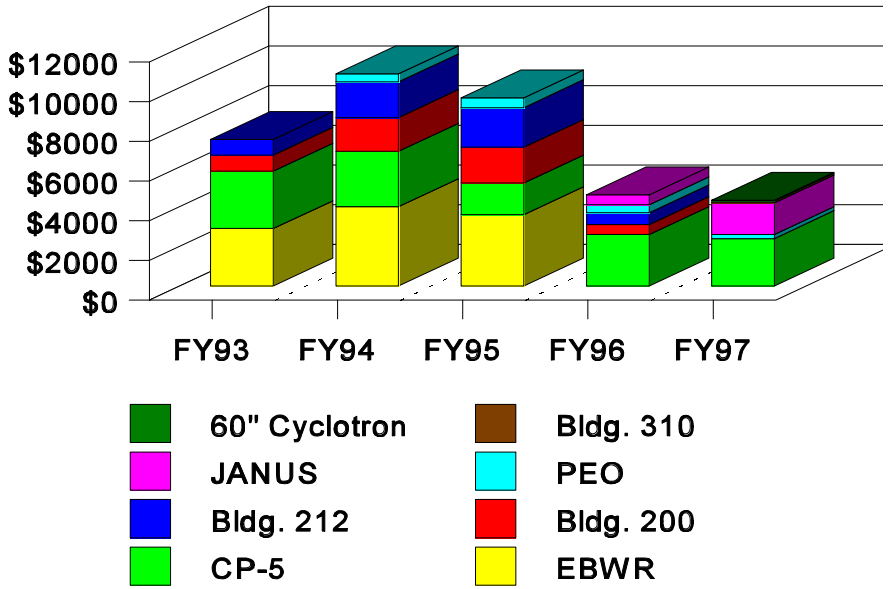
1996:

- Experimental Boiling Water Reactor (Bldg. 331)
- M-Wing Hot Cell Facilities (Bldg. 200)
- Plutonium Gloveboxes (61 gloveboxes in Bldg. 212)
- Fast Neutron Generator (Bldg. 314)

1997:

- JANUS Reactor (Bldg. 202)

Funding by Fiscal Year
(in $K)



Future D&D Projects at the ANL-E Site

Several ANL-E facilities, surplus to the mission of the Laboratory, will require future D&D. Planning and documentation for the Bldg. 310 Surplus Retention Tanks was completed in FY 1997. Planning and documentation for the remaining projects will be completed in future years. If funding is received at the levels proposed in Department of Energy Office of Environmental Management document *Accelerating Cleanup Paths to Closure** (formerly *Draft 2006 Plan*), the ANL-E D&D Program would be completed at the end of FY 2002.

- 60" Cyclotron (Bldg. 211) - Used for basic research, this facility met widely diversified operational requirements, producing beams of deuterons, helium ions, singly charged hydrogen molecules and neutrons of a broad energy spectrum.

- Hot Cells (Bldg. 301) - The hot cell area, the first cells constructed at ANL-E, contains eight caves that were used to perform a variety of radiological research activities.

- Surplus Retention Tanks (Bldg. 310) - These tanks were placed into service more than 30 years ago and used for interim storage of radioactive liquids when the processing and holding tanks at an adjacent facility were full.

- Zero Power Reactors 6&9 (Bldg. 315) and the Argonne Thermal Source Reactor (Bldg. 316) - These facilities were used for reactor physics research and instrumentation studies.

- Juggernaut Reactor (Bldg. 335) - A light-water moderated and cooled, graphite-reflected research reactor designed to conduct basic research.

- Waste Ion-Exchange Facility (Bldg. 579) - This facility was utilized to process waste from Laboratory tanks.

*Full document can be found at **http://www.em.doe.gov/closure**.